

MODEL 3000

Current meter, Flow Calculator - Datalogger

Still the best
Choice !

The new Model 3000 is a hand held computer and data logger designed specifically for the measurement of open channel velocities and the on-site computation of stream discharges (flow). Features Include:



The Model 3000 Indicator is a data-logging version of the Model 2100, allowing the operator to input all measurement data usually kept on a clipboard while crossing a stream. The Model 3000 records depths, widths, velocities and angles along with time & date of measurements. It figures the "Q" and can upload all this information in spreadsheet-acceptable format to your PC for further study and record keeping. It updates and is fully compatible with all previous Swiffer instruments.



Model 3000 with optional sensors

- Efficient *Photo-Fiber-Optic* sensor coupled with precision quartz crystal controlled electronics provide accurate repeatable data in most flow conditions.
- The *Model 3000* Indicator displays data in feet and meters per second. Toggle the 0 key at the main screen to change from one to the other.
- Velocity averaging is fully user adjustable. Anything from 1 to 999 seconds of averaging can be chosen. The *Model 3000* automatically powers up using your last averaging time period. If you use 40 seconds, it stays at 40 seconds until you change it.
- Velocities can be a single averaged measurement or can be the *accumulated average* of as many measurements as desired, all controlled from the keypad.
- Sensor components (propeller, rotor, and rotor shaft) are easily and inexpensively replaceable. Carry spares into remote locations and you'll never have to return early because of a bent propeller or bucketwheel, or a lost propeller magnet or rotor shaft.
- Wide choice of sensor carriers or "wands" to accommodate virtually any open stream velocity measuring requirement.
- Indicator keys are color coded, grouping related functions into like colors.
- Lightweight, portable system is easy to work with all day in the field. *Model 3000* Indicator uses the same rugged, weatherproof instrument housing as the earlier Model 2100 and Model 2200 but with added water incursion protection and data storage features.
- A simple and *accurate* method of user-accomplished calibration is provided with the *Model 3000*. No other current meter provides the user a method of checking and changing calibrations in the field.
- Calibration settings for 10 different sensors/propellers can be stored in the indicator and the *Model 3000* is completely compatible with all earlier Swiffer Instruments' sensors (Models 1000, 2000, 2100 and 2200).
- The *Model 3000* is also specifically designed to function with Price type AA & Pygmy current meters using either the optical adapters pioneered by Swiffer Instruments in the Models 2200 and USGS-HIF Optic-Head sensors or with meters using the newer magnetic head contactors. The Model 3000 can in fact be field calibrated to operate with any sensor that uses a contact closure signal system.
- Prompts on the *Model 3000* liquid crystal display assist the user through all operations; from simple velocity measurements to discharge flow computations.
- On-board clock time-stamps data collected while in the Discharge Mode. (Month, day, year, hour & minutes). Data units (feet or meters) is also saved and uploaded with file transfers.
- In the Discharge Mode as many as 1000 "stations" in from 1 to 100 stream cross-sections can be acquired and stored in memory. Station No. (width) and station depth are entered directly by the keypad and velocity and flow is computed by the *Model 3000*.
- If stations have velocities at an angle other than perpendicular to the stream cross-section the angle can be input by keypad. The *Model 3000* then applies a cosine correction for that Station; necessary for using the Model 3000 with vertical axis current meters only.
- The accumulated discharge for a transect can be computed and displayed at any time during or after a transect. Individual Stations in a transect can be added or deleted as desired and each component of a station (*Station No.*, *Depth*, *Velocity* and *Angle*) can also be edited.
- All discharge data in the *Model 3000* can be transferred to a Personal Computer via USB for further processing. Simple file transfer software and a USB connection cable is provided.



3000-1514 and 3000-1518 wands

MODEL 3000 CURRENT METER SPECIFICATIONS *

VELOCITY RANGE

0.1 to 25 Feet Per Second (propeller meters)
(0.03 to 7.5 Meters Per Second)

DISPLAY

Two line by 16 character Liquid Crystal Digital.

RESOLUTION

To three decimals, both feet and meters.

ACCURACY

Can be held to within 1% with periodic user-
required calibration tests and adjustments.

DISPLAY AVERAGING

User adjustable from 1 to 999 seconds. Remains unchanged with each power-up until purposely reset. Velocities obtained within each sampling period can be averaged with successive periods .

OPERATING TEMPERATURE

LCD Min. -20°C
 Max. 70°C
Sensor Min. -17.8°C
 Max. 90°C

POWER REQUIRED

Four AA batteries. Alkaline or rechargeable nicads.

INDICATOR SIZE

4 by 6 by 2 inches (15.2 by 10.2 by 5.1 cm)

INDICATOR WEIGHT

25 oz. (including 4 AA batteries).

INDICATOR MATERIAL

Vacuum-formed ABS with a clear acrylic viewing lens over the LCD.

INDICATOR KEYPAD

Back-printed polycarbonate in four colors plus black. Tactile feedback membrane type contacts with minimum actuation pressure required for long life and water resistance.

FASTENERS

Stainless Steel & Brass.

SENSOR WAND MATERIALS

Aluminum = 6061-T6, Stainless Steel = #303

SENSOR BODY AND ROTOR

Acetron GP (rotor body) & Ertalyte® TX, an internally lubricated thermoplastic polyester that provides enhanced wear over all previous rotor materials.

SENSOR PROPELLER

Glass-filled nylon. 2" diameter is supplied. Other sizes are available for special applications.

ELECTRICAL CONNECTION

Polyurethane jacketed, Kevlar core, high strength cable. Two-conductor sensor signal system. Circular plastic, water resistant connector with twist-lock operation. Connections use gold plated contacts.

CABLE LENGTH

Equal to wand at full extension plus five feet. Special lengths to 1000 feet are also available.

SENSOR TYPE

PHOTO-FIBER-OPTIC - two-conductor electrical with all electronics permanently encapsulated in epoxy resin.



3000-LX, 3000-STDX, 3000-12, -13, -14 wands



Optional Waterproof Carrying cases for Model 3000